

Application No. 10/017,942

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of packaging electronic devices that operate based on acoustic waves, comprising the steps of:

providing a cap wafer having a an unetched cap wafer surface;

lithographically forming raised ridges on-in the cap wafer surface by removing material from the unetched cap wafer surface between lithographically defined areas of the unetched cap wafer surface to form an etched cap wafer surface having the raised ridges extending therefrom so that the raised ridges are a contiguous part of said cap wafer, the raised ridges formed so as to have a height extending above the cap wafer surface;

printing a glass frit material on the raised ridges; and

bonding, via said glass frit material at each raised ridge, the unetched cap wafer surface to a substrate surface containing electronic devices,

each raised ridge using surface tension to hold the glass frit to a higher and thinner frit line width dimension, and to prevent lateral flow of the glass frit, than if the frit were deposited directly on a flat cap wafer surface without lithographically formed raised ridges.

2. (Cancel)

3. (Cancel)

4. (Cancel)

5. (Previously Presented) The method of claim 1, wherein a linewidth of the frit is less than 125 μm.

6. (Cancel)

7. (Previously Presented) The method of claim 1, wherein bonding areas when the raised ridges are bonded form a continuous perimeter around the device, so that a hermetic seal is formed.

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8. (Previously Presented) A method of packaging electronic devices operating based on acoustic waves, comprising the steps of:
providing a cap wafer having a surface;
trenching recesses into the cap wafer surface at areas near the perimeter of a desired cavity region;
printing material into the recesses and planarizing it such that each filled recess is flush with the cap wafer surface; and
etching away the cap wafer surface, except for the areas of the original recesses, so that the material forms raised ridges to be bonded to a substrate surface in contact with at least one electronic device.

9. (Previously Presented) The method of claim 8, wherein each of the raised ridges is formed slightly inboard from the perimeter of a desired cavity region, each raised ridge composed of a glass frit material for bonding the cap wafer to the substrate surface.

10. (Original) The method of claim 9, wherein a linewidth of the frit is less than 125 μm

11. (Previously Presented) The method of claim 8, wherein, after the recesses are formed and the recesses are filled, the raised ridges are fabricated by etching the surrounding cap wafer surface surrounding each filled recess.

12. (Previously Presented) The method of claim 8 wherein the raised ridges form a continuous perimeter around a cavity region such that a hermetic seal is made when the cap wafer is bonded to a wafer or a substrate in contact with an electronic device.

13. (Currently Amended) The method of claim 1, wherein lithographically forming raised ridges includes;
trenching recesses into the cap wafer surface at areas near the perimeter of a desired cavity region;

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printing material into the recesses and planarizing the material so that each filled recess is flush with the cap wafer surface; and

etching away the unetched cap wafer surface, except for the areas of the filled recesses to form the etched cap wafer surface between the filled recesses, so that the raised ridges extend above the etched cap wafer surface.